

P. INT COOPERATION TREA

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C.20231
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 12 October 2000 (12.10.00)	
International application No. PCT/GB00/00699	Applicant's or agent's file reference Q. CAO 16-4-3
International filing date (day/month/year) 28 February 2000 (28.02.00)	Priority date (day/month/year) 10 March 1999 (10.03.99)
Applicant CAO, Qiang et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

28 August 2000 (28.08.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Pascal Piriou Telephone No.: (41-22) 338.83.38
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WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : H04J 11/00, H04Q 7/38	A1	(11) International Publication Number: WO 00/54444	(43) International Publication Date: 14 September 2000 (14.09.00)
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(71) Applicant (for all designated States except US): LUCENT TECHNOLOGIES INC. [US/US]; 600 Mountain Avenue, Murray Hill, NJ 07974-0636 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CAO, Qiang [CN/GB]; 23 Castlefield Close, Swindon, Wiltshire SN5 7EG (GB). LIM, Seau [SG/GB]; 17 Union Street, Swindon, Wiltshire SN1 3LD (GB). MUECKENHEIM, Jens [DE/DE]; Flataustrasse 57, D-90411 Nuremberg (DE).

(74) Agents: WILLIAMS, David, J. et al.; Lucent Technologies UK Limited, 5 Mornington Road, Woodford Green, Essex IG8 0TU (GB).

(81) Designated States: AU, BR, CA, CN, ID, IN, JP, KR, US.

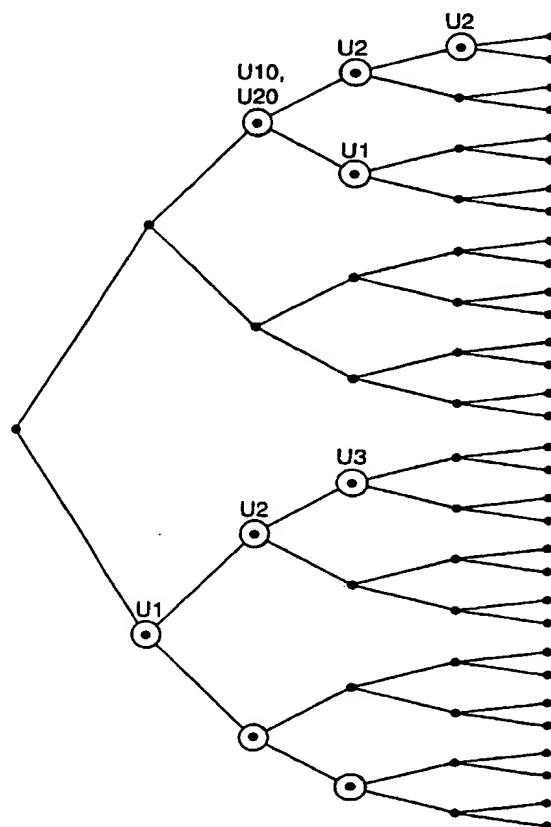
Published

With international search report.

(54) Title: COMMUNICATING CODE BRANCH ALLOCATION FOR CDMA SYSTEMS

(57) Abstract

There is disclosed a method of communicating a selected channelisation code for a downlink to a user, comprising: transmitting a set of nodes of a code tree comprising a defined path of the tree for the user; and transmitting an identifier identifying one of the set of nodes to be used.



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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference q. CA0 16-4-3	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 00/ 00699	International filing date (day/month/year) 28/02/2000	(Earliest) Priority Date (day/month/year) 10/03/1999
Applicant LUCENT TECHNOLOGIES et al.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

5a _____

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No.

P 00/00699

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 ~ H04J11/00 H04Q7/38

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04Q H04B H04J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95 03652 A (QUALCOMM INC) 2 February 1995 (1995-02-02) page 4, line 1 - line 18 page 13, line 30 - page 17, line 17 page 26, line 25 - line 2 abstract; claims 1-19; figure 2 --- -/--	1,2

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

24 May 2000

Date of mailing of the international search report

02/06/2000

Name and mailing address of the ISA

 European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
 Fax: (+31-70) 340-3016

Authorized officer

Coppieters, S

INTERNATIONAL SEARCH REPORT

International Application No.

P GB 00/00699

C:(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>I.C -L ET AL: "MULTI-CODE CDMA WIRELESS PERSONAL COMMUNICATIONS NETWORKS" COMMUNICATIONS - GATEWAY TO GLOBALIZATION. PROCEEDINGS OF THE CONFERENCE ON COMMUNICATIONS, SEATTLE, JUNE 18 - 22, 1995, vol. 2, 18 June 1995 (1995-06-18), pages 1060-1064, XP000533158 INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS ISBN: 0-7803-2487-0 page 1060, paragraph 4 page 1062, right-hand column, line 11 -page 1063, left-hand column, line 30 -----</p>	1,2

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

P 00/00699

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9503652 A	02-02-1995	AU 7368294 A	20-02-1995
		IL 110373 A	06-12-1998
		US 5751761 A	12-05-1998
		ZA 9405260 A	27-02-1995

path of the tree for the user; and transmitting an identifier identifying one of the set of nodes to be used.

The set of nodes may be transmitted to the user during the radio access bearer establishment session between the user and a base station. The set of nodes may be included in the transport format set.

The identifier may be transmitted in a data packet. The identifier may be transmitted in a transport format combination identifier.

The invention will now be described by way of example with reference to the accompanying drawings, in which:

Brief Description of the Drawings

Figure 1 illustrates the basic principle of a code tree;

Figure 2 is a flow diagram illustrating the general steps of a channelisation code allocation technique according to the prior art;

Figure 3 illustrates a specific example of code allocation according to the technique of Figure 2;

Figure 4 is a flow diagram illustrating the general steps of a new channelisation code allocation technique;

Figures 5(a) and 5(b) illustrate a specific example of code allocation according to the technique of Figure 4;

Figure 6 illustrates the general steps in communicating a channelisation code for the downlink according to a known technique; and

Figure 7 illustrates the general steps in communicating a channelisation code for the downlink according to a new technique.

Description of Preferred Embodiment

The new technique for allocating channelisation codes described herein applies equally to channelisation code allocation in the uplink and the downlink. In the following description a general introduction to the concept of channelisation codes is given, followed by an overview of one current technique for allocating channelisation codes. Thereafter, the new technique of allocation of channelisation codes is described.

The channelisation codes for UMTS for the uplink as well as for the downlink are orthogonal variable spreading factor (OVSF) codes which

Claims

1. A method of communicating a selected channelisation code for a downlink to a user, comprising: transmitting a set of nodes of a code tree comprising a defined path of the tree for the user; and transmitting an identifier identifying one of the set of nodes to be used.
2. The method of claim 1 wherein the set of nodes are transmitted to the user during the radio access bearer establishment session between the user and a base station.
3. The method of claim 2 wherein the set of nodes are included in the transport format set.
4. The method of claim 1 or claim 2 wherein the identifier is transmitted in a data packet.
5. The method of claim 4 wherein the identifier is transmitted in a transport format combination identifier.

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REC'D 31 MAY 2001

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference Q. CAO 16-4-3	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/00699	International filing date (day/month/year) 28/02/2000	Priority date (day/month/year) 10/03/1999
International Patent Classification (IPC) or national classification and IPC H04J11/00		
Applicant LUCENT TECHNOLOGIES et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.


2. This REPORT consists of a total of 4 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 2 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 28/08/2000	Date of completion of this report 29.05.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Tillgren, M Telephone No. +49 89 2399 7497



**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/00699

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1,2,4-16 as originally filed

3 as received on 05/04/2001 with letter of 02/04/2001

Claims, No.:

1-5 as received on 05/04/2001 with letter of 02/04/2001

Drawings, sheets:

1/10-10/10 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/00699

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	2-5
	No:	Claims	1
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-5
Industrial applicability (IA)	Yes:	Claims	1-5
	No:	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/GB00/00699

Re Item V

- 1) With regard to present claim 1 the document WO-A-95 03625 (hereinafter referred to as D1) discloses a method of communicating a selected channelisation code for a downlink to a user (abstract), comprising transmitting a set of nodes of a code tree comprising a defined path of the tree for the user and transmitting an identifier identifying one of the set of nodes to be used (page 13-17).

Hence claim 1 does not fulfill the requirements of Articles 33(2)&(3) PCT since its subject matter is not novel and does not involve an inventive step.

The above objections could also be raised based on I Chi-Lin et al: "Multi-Code CDMA Wireless Personal Communications Networks" Communications Gateway to Globalisation. Proceedings of the Conference on Communications, Seattle, June 18-22, 1995 (hereinafter referred to as D2).

- 2) Regarding dependent claims 2-5 the subject matter of claim 2 is known from or rendered obvious by D1 and the respective subject matter of claims 3-5 are the results of purely implementational decisions and do therefore not contribute to an inventive step.

Hence claims 2-5 does fulfill the requirements of Article 33(2)PCT but not those of Article 33(3) PCT since their subject matter is novel but does not involve an inventive step.

Re Item VII

- 1) Independent claim 1 is not in the two-part form in accordance with Rule 6.3(b) PCT, which in the present case would be appropriate, with known features (see D1) being placed in the preamble (Rule 6.3(b)(i) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).

Said claim should therefore have been redrafted accordingly.

- 2) To meet the requirements of Rule 5.1(a)(ii) PCT, the documents D1 and D2 should have been identified in the description and the relevant background art disclosed therein should have been discussed.